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Summary

About this Release

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One strategy for managing small business provider load is to ask small businesses for a reduced set of data items and then use synthetic estimation techniques to estimate totals for those data items not collected. This strategy was adopted by the Australian Bureau of Statistics (ABS) in its design of the Input-Output (I-O) Survey. Small businesses are only required to provide detailed expense items if they fall in specifically targeted industries; otherwise they provide 'other operating expenses' - the sum of the detailed expense items - and a number of auxiliary variables.

For small businesses in industries not targeted for the I-O survey, synthetic estimation techniques are used to estimate totals of the detailed expense data items. The multinomial logistic regression model has been adopted to motivate their construction for the following reasons:

- auxiliary information can be used;
- synthetic estimates of detailed expense items produced by this method are
 - non-negative,
 - less than or equal to 'other operating expenses', and
 - sum to 'other operating expenses'.

The multinomial logistic regression model can be used to motivate an alternative to the generalised linear regression estimator (GREG). This is the logistic generalised regression estimator (LGREG). It can be used to estimate totals of detailed expense items from the sample selected for the I-O Survey.

The design-based paradigm has been adopted throughout. The multinomial regression model has been used as a device to motivate estimating equations for finite population parameters which are used in the construction of estimates.

